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METHODOLOGIES TO MEASURE POVERTY: MORE THAN ONE IS BEST!

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Paper for

INTERNATIONAL SYMPOSIUM

POVERTY: CONCEPTS AND METHODOLOGIES

MEXICO CITY MARCH 28/29 2001

INTRODUCTION

Any attempt to measure the adequacy of resources or the prevalence of poverty requires that a threshold be established against which the living standards of an individual, family or household can be measured. This threshold is necessary to determine whether they are in poverty (poverty rate) and/or how far below the poverty threshold they are (poverty gap). A large variety of thresholds have been established since a century ago Seebohm Rowntree (1901) in his pioneering study of poverty in York fixed his primary poverty threshold, as the income required to purchase mere physical necessities. This minimum budget standards approach dominated conceptions of poverty in the first half of this century. However, in the second half, a wider range of methods have been developed to establish thresholds, many in response to the advance in our conceptual understanding of poverty, not as an absolute or physical lack of basic necessities, but as a socially determined or relative lack of resources, as relative deprivation. Among these approaches there have been

- **budget standards** studies which have followed the essence of the normative Rowntree approach, but in their modern guise have sought to establish thresholds less concerned with physical necessities, including low cost and modest but adequate budgets (Bradshaw 1993, Saunders et al 1998, Parker 2000, Bernstein et al 2000). Budget standards involve drawing up a list of commodities, employing normative judgements, supported by a combination of scientific and behavioural evidence. The budget is then priced and used as an income or expenditure standard anyone living at or below that standard is in poverty
- The US poverty standard was developed using a related concept what one might call a 'component-and-multiplier' approach. Orshansky took the costs of a minimal food budget for different family sizes and derived poverty thresholds by multiplying these costs by three that being the inverse of the share of money income spent on food by the average family (Orshansky 1965, Ruggles 1990). Bradbury and Jantti (1999) applied the US poverty standard to (circa 1995) Luxembourg Income Survey data using purchasing power parities).
- A variety of poverty standards can be derived from **expenditure** data. So for example the point of the income distribution where households spend more than a given proportion on necessities can be used (Bradshaw, Mitchell and Morgan 1987). Similar methods based on expenditure on luxuries or non necessities have been used (Saunders, Bradshaw and Hirst 2000).
- One of the earliest poverty threshold established in Britain (Abel Smith and Townsend 1965), and used by the government until 1984 in the Low Income Families series, was based on a **minimum income standard** (in fact the *social assistance scales* rates plus a margin). Heikkila and McCausland (1997) tried this technique for EU countries using OECD data and I have recently been experimenting with the use of Minimum Income Standards for Eurostat (Bradshaw 2001). Another technique combining expenditure and benefits has been used to estimate the budget shares spent on necessities (food, fuel and clothing) of those on Income Support and fix an income poverty line based on that budget standard (Bradshaw and Morgan 1987).

- **Income thresholds** are the ones most commonly used by national governments and international organisations such as the EU or OECD. The World Bank has adopted a threshold of \$2 a day for most developing countries (Peter Townsend will be talking about this). The tendency in industrialised nations has been to take a point on the distribution of *equivalent income* (or more rarely *expenditure*) normally 40, 50 or 60 per cent of the mean or median. Eurostat have recently settled on a threshold of 60 per cent of the median.
- Townsend (1979) pioneered the use of **social indicators** to establish a poverty threshold relative deprivation was defined when a family lacked three or more deprivation indicators. Mack and Lansley (1983) and Gordon and Pantazis (1998) improved that approach by democratising the choice of deprivation indicators by asking the general population what they considered were "socially perceived necessities". They also distinguished between items that were lacking because they could not be afforded, and items that were lacking because they were not wanted. More recently the list of socially perceived necessities has been expanded to a range of items, activities, circumstances and opportunities that better reflect the range of resources that ought to be included in a relative conception of poverty or social exclusion (Gordon et al 2000).
- Subjective measures, where the population determine a poverty income threshold can also be used to measure poverty. Thus for example after the World Summit on Social Development in Copenhagen in 1995, 117 countries adopted a declaration and programme of action which included commitments to eradicate *absolute* and reduce *overall* poverty, drawing up national poverty alleviation plans as a priority (UN, 1995). *Absolute* poverty was defined by the UN as a "condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services". (UN, 1995, p. 57). Gordon et al (2000) attempted to operationalise three measures of subjective poverty in the *Poverty and Social Exclusion Survey of Britain* and I shall be reporting some of the results later in this paper.
- Combinations: Recently there has been an awareness of the value of using more than one measure of poverty at the same time. Layte, Nolan and Whelan (2000) developed the technique by using social indicators in combination with income thresholds. Dirven (2000) and Eurostat (2001) have been exploring poverty and social exclusion using a variety of different measures available in the European Community Household Panel Survey and recently we (Bradshaw and Finch 2001) have have also been exploring what we call "core" poverty using the Survey of Poverty and Social Exclusion of Britain.

There is no doubt that this century of endeavour has advanced our understanding of poverty, both conceptually and empirically. Nevertheless since the abandonment of absolutist notions of poverty something has been lacking. Rowntree's approach was somehow unchallengeable - there was categorically no doubt that human beings needed the physical necessities for survival. His findings had clout, advancing both understanding of poverty - that it was structural - the result of low wages in 1899 - and not behavioural as the Charity Organisation

Society had opined. He also had a profound impact on policy, influencing the social reforms of the 1908-1923 Liberal Government and later Beveridge.

In contrast the other approaches have been easier to challenge -

- why should such and such an item be included in a budget standard, costed at that price and given that lifetime?
- Social assistance scales were established to prevent poverty, lift people above it. How can it be justified to use them as a poverty threshold?
- Why should 40, 50 or 60 per cent of average income be poverty thresholds surely they are points on a distribution merely measures of inequality, which is not the same?
- What justification is there for using this unit of anlysis or that equivalence scale?
- Why should lacking three socially perceived necessities rather than (say) one or six, be a good poverty threshold?
- Is not self perceived poverty flawed by false expectations?

These are some of the criticisms made of each of the methods outlined earlier. There are of course some justifications in them, and indeed answers to them. But they illustrate that as the setting of poverty thresholds has moved away from poverty defined as physical necessities, in absolute terms, the moral authority of the word poverty seems to have diminished. Or at least, despite the range and variety of evidence that substantial minorities of our citizens (at least in some of the rich countries) are living in poverty, policy makers in those countries have failed to respond to the evidence).

If modern relative thresholds of poverty are unconvincing should we be returning to a measure based on some understanding of basic needs or absolute poverty?

ABSOLUTE POVERTY

Basic needs are what philosophers call categorical needs – needs which must be met in order for human beings to function. There is no doubt that food, clothing (at least in all European countries), shelter and fuel for heating (at least in most/all European countries) are categorical needs. However any attempt to represent these as a basket of goods and services immediately comes up against the impossibility of avoiding relative judgements. Choices about what to include in a dietary, in a wardrobe, the form of shelter and type of heating are all inescapably determined socially - by the societies we live in, and therefore relatively. Minimum subsistence is a relative notion. Furthermore most governments in European societies would not find it acceptable only to meet these physical needs. They would, and do in the minimum income schemes they provide, go further than the meeting basic physical needs. The UN defined absolute poverty as a "condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not just on income but also on access to services" (UN 1995, p.57). This definition goes beyond minimum subsistence ideas of absolute poverty. In addition Townsend (1979), Sen (1983) and Doyal and Gough (1991) have argued that basic human needs cannot be understood purely in physical terms – the essence of humanity is the capacity to make choices and any (absolute) measure of poverty has to take account of capabilities including the capacity to participate. But at what level? The answer to that question takes us back to a relative understanding of poverty.

So there is no such thing as absolute poverty. Or rather, all poverty measures are more or less relative, and what we mean by absolute poverty is something that is less relative than our traditional measures of relative income poverty – which are really measures of inequality.

Nevertheless there are good reasons for using a poverty measure that has the following characteristics.

- 1. It should give poverty rates that fall as real incomes increase not necessarily at exactly the same rate but at least not being entirely relative otherwise we risk measuring inequality not poverty.
- 2. Where possible it should have some kind of structural authority be recognised, used at present or in the past by government(s).
- 3. Have some kind of scientific authority that it must be related to ideas about basic needs, minimum subsistence, minimum but adequate notions and not be just arbitrary.

I have recently completed a project for Eurostat (Bradshaw 2001) that has explored a variety of the measures that have been discussed above and evaluated them (using the European Community Panel Survey and the European Budget Survey) against these criteria. Among the thresholds considered were

A relative threshold that does not move with incomes but only with prices

Take, say, the conventional less than 60 per cent of median equivalent income at a point in time and then up-rate it in real terms only, as time passes. How does it meet the criteria above?

- 1. As long as inflation in earnings (and other sources of income) exceed price inflation it would, year after year, produce lower poverty estimates than a measure based on the current median.
- 2. This measure is recognised by some governments already. For over a decade the UK government published poverty estimates based on a 1979 real terms income threshold, and in the *Opportunity for All* indicators (DSS 2000), is now publishing poverty indicators which includes one based on a 1994/5 real terms income threshold. The US Poverty Standard has been up-rated only in real terms for four decades.
- 3. There never has been any scientific justification for the 60 per cent of median equivalent income threshold (or indeed the other relative income thresholds based on the mean or median).

So Mexico could adopt a measure based on a real-terms income threshold, fixed at a point in time but it fails the test of scientific justification. Further, not only the level but also the date the threshold is fixed would be entirely arbitrary. Sooner or later it would have to be re-based – again at an arbitrary level and at an arbitrary time.

Social assistance standards:

Every industrial country has some scheme of social assistance, which provides a floor below their social insurance system, providing for those who have limited resources a source of income on the basis of a test of their incomes, assets and also, often for some classes of claimant, a behavioural test (that they are available for employment). The schemes are not

necessarily a minimum income guarantee as their coverage is not universal, but there are scales covering all household types.

- 1. We found that for each EU country their social assistance scales give lower poverty rates than the relative income threshold.
- 2. They are government determined or government influenced standards. Even in those countries where there is a considerable degree of local discretion in the administration of social assistance, there are national guidelines more or less influencing that discretion.
- 3. The extent to which the social assistance scales are based on some scientific notion of adequacy, varies from country to country. In some countries the link with science is an old one with the rationale lost in the passage of time (eg France, UK). In others it is more up to date and still formally based on a standard budget (eg Sweden) (Veit Wilson 2000).

The US poverty standard

This standard could be used as a threshold on the grounds that has been explored in great detail by US social scientists and has stood the test of time.

- 1. It certainly would not give lower poverty rates for Mexico than the relative income standard
- 2. It has substantial, nay incredible, structural authority in the US having been used not just as a poverty standard for over three decades but also employed as the basis of means tests for a variety of federal programmes.
- 3. There is room to argue about the quality of its scientific basis. However it certainly has its origins in a budget standard and was originally derived from a food budget.

There are no particular empirical problems. The US Poverty threshold can be applied, to income or expenditure data. The standard is well supported with a vast array of documentation produced by the Bureau of Labour Statistics and US Department of Health and Welfare. However there will be arguments about the validity of the measure itself based on the criticism of it by the National Academy of Science (Citro and Michael 1995). Without going into these in detail they include the argument that the multiplier (three times the food budget) is no longer appropriate because the cost of food has fallen; that the types of income included is incomplete; that certain types of expenditure ought to be excluded in calculating net income; that the equivalence scale is anomalous; and that the standard does not adjust for geographical variations in the costs of living, especially housing costs. As a result of these criticisms a number of proposal for reform were made and some adopted in the US Census Bureau Experimental Poverty thresholds. But to date there has been no resolution of how to take account of common expenses such as child care, work related expenses, medical costs and housing costs – at present the extant suggestion is that these should be simulated. So if Mexico is to adopt the US Poverty threshold it would either have to adopt the present standard with its burden of scientific criticism, or do the work necessary to implement the Experimental Standard. An alternative would be to derive a poverty standard based on a similar methodology. This would get you into expenditure thresholds and budget standards and.

Constrained expenditure approach

One way of using expenditure data to fix poverty thresholds is to take the point on the distribution of expenditure (or income) where expenditure on non necessities and/or luxuries is constrained – indicated by nil or a small proportion of expenditure going on those items. The argument is that it is these households who are giving priority to meeting basic needs.

- 1. We found that these types of thresholds produce lower poverty rates than the conventional relative income thresholds.
- 2. We do not know of any example of this technique being used by Governments to set minimum income thresholds but it is an element of the budgets standards approach which is certainly used by national governments.
- 3. The use of budget shares to establish constraints on household resources has been part of the armory of micro economics ever since Engel and this approach is a derivative of S curve analysis.

However there are problems in the application of these ideas: First, in defining non-necessities and luxuries. Any definition is open to challenge. Second, a household may spend little or nothing on luxuries or non necessities not because their budget is constrained but because it just happens that during the expenditure period covered by a budget survey they did not spend on these items. In contrast a poor household may have spent on non-necessities during the expenditure period despite spending very little over the year. Thus there are inevitable false positives and false negatives. We have tried this kind of analysis in previous comparative work on poverty thresholds and using regression techniques to fix thresholds. The equivalence scales implied by the thresholds have not made much intuitive sense (Saunders et al 1999).

Budget standards

Budget standards are normative basket of goods designed to represent a standard of living. Budget standards are produced in a number of countries including I believe Mexico.

- 1. The budget standard can be derived to represent any living standard you care to choose.
- 2. Budget standards are being used for a variety of purposes in EU and many minimum income schemes originally had their origin in budget standards methodology.
- 3. The elements of the budget can be derived using systematic scientific procedures and designed to meet an explicit standard of living. The choice of items included in the budget can be influenced by consumer research. The prices paid for those items can be based on national outlets or have local variations. A budget standard can be up-rated by the movements in a price index or commodity price index. But from time to time would need to be revised to take account of changes in general living standards.

Drawing up a budget standard from scratch is a major undertaking, involving the production of list of items, deciding on quality and quantity, setting life-times for items bought occasionally or irregularly and then pricing the items. There will inevitably be disputes about the items that are included in the budget but the great asset that budget standards have over other poverty standards is that they are transparent and can be easily adapted.

We have been responsible for re-pioneering budget standards methods in the UK (Bradshaw 1993) and believe that they have potential in living standards research. However, ironically, because they are so transparent they tend to receive more critical attention than other poverty standards do. In the UK and Australia where some of the most detailed work on budget standards have been done in recent years they have not been adopted as standards by national governments.

THE CASE FOR USING MORE THAN ONE MEASURE OF POVERTY

We (Bradshaw and Finch 2001) have recently been exploring the interaction of some of these measures of poverty using the Survey of Poverty and Social Exclusion in Britain (Gordon et al 2000). We used explored the interaction of four measures of poverty used in the survey. These were

Normative poverty.

Represented by a lack of socially perceived necessities. This is based on the social indicator methodology pioneered by Townsend (1979) and developed especially by Mack and Lansley (1993) and Gordon and Pantazis (1998). For the PSE survey we developed a new and more elaborate index than previously (including a separate index for children). We established the proportion of the general population who considered an item was a necessity in a survey that preceded the PSE survey. Only items that 50 per cent or more of the general population considered were necessities were included in the index. We counted the proportion of households lacking 4 or more adult necessities. In the PSE survey 17.2 per cent lacked four or more necessities.

Felt poverty

Felt poverty is represented here by those who say that they feel poor. In the PSE survey we used three sets of questions to measure subjective poverty, including an attempt to operationalise the *Absolute* and *Overall* notions of poverty adopted by the UN World Summit on Social Development in Copenhagen in 1995 (UN 1995). Here we use the results obtained from the following questions.

How many pounds a week, after tax, do you think are necessary to keep a household such as the one you live in, out of poverty?

How far above or below that level would you say your household is?

A lot above that level of income

A little above

About the same

A little below

A lot below that level of income

Don't know

19.6 per cent were a little or a lot below that level of income.

Represented here by those who have a relatively low income - those households with net equivalent household income less than 60 per cent of the median before housing costs. The study employed a variety of equivalence scales, including one created especially, based on budget standards research. But for this paper we have used the modified OECD scale. 18.8 per cent of households were poor using this measure.

We should acknowledge that the empirical representation of each of these concepts is flawed - partly by the fact that they inevitably involve a judgement about the threshold that should be applied.

Table 1 shows the proportion lacking each of the poverty components. The proportion poor by each measure is fairly similar.

Table 1. Poverty rate by each measure of poverty: Poverty and Social Exclusion in Britain Survey

Poverty Measure	% poor
Normative Poverty (lacking 4+ socially perceived necessities)	17.2
Felt Poverty (subjective measure)	19.6
Comparative Poverty (equivalent income before housing costs less than 60% median)	18.8

However it can be seen in Table 2 that while 33 per cent would be poor on at least one of the measures and only 5.7 per cent would be poor on all three measures. This result indicates a quite extraordinary lack of overlap between measures which have been and are used to represent poverty. Indeed if the measures were completely uncorrelated one would expect to obtain a distribution which is very close to the one obtained. The actual and predicted proportions are given in the table 2.

Table 2: Number of measures on which respondents are poor

	Actual	Expected
Poor on at least one	32.9	32.9
Poor on a least two	16.1	10.9
Poor on three	5.7	3.6

Note: Expected under hypothesis of NO ZERO correlation between variables

What are the reasons for this?

- Some lack of overlap is inevitable given the different proportions included by each of the thresholds used.
- Then there are cases in transition. For example there are households who have recently retired or lost a worker who are now currently income poor but not (yet) necessities poor they still have the assets acquired in better times. In contrast there are households who have recently entered employment for example who are not now income poor but who have not (yet) been able to gather together the necessities that they lacked while unemployed.
- Then there is "false consciousness". In the subjective measure people may claim to be in poverty when they are not (by other dimensions) and people may not feel they are

- in poverty because they have limited understanding of relative living standards.
- Another kind of false consciousness due to low aspirations can occur in relation to the necessities measure some will say that they lack necessities but because they don't want them rather than because they cannot afford them. The democratic majority view is that they should want them. In general pensioners are more likely than non pensioners to say that they 'don't have and don't want' necessities and as we shall see, they are less likely to be defined as normatively poor.
- Then there are technical explanations to do with the measures themselves. One of these which is likely to be important is the fact that the GHS income variable is before housing costs. At a given before housing costs equivalent income level, households with high housing costs are more likely to feel poor and lack social necessities than households with low housing costs. In our analysis of the PSE survey we found that London is a region with a comparatively low income poverty rate but a comparatively high socially perceived necessities poverty rate. This may be due to the impact of housing costs.

So there are a number of reasonable explanations for the lack of overlap in the louseholds defined as poor by each of our measures.

However not only is the proportion who are poor different on these different measures but the characteristics of the poor are also different. Thus a different poverty measure may lead to a different policy response. But how do we establish who are the core poor using these measures. In a longer version of this paper we approached an answer to this question by analysing overlap in two ways. First by exploring the cumulation of dimensions of poverty. We have found that the more dimensions that people are poor on, the more unlike the non poor and the poor on only one dimension they are - in their characteristics, in their social attitudes and in their social exclusion. Second by treating particular dimensions as meriting more attention than others. We explored three permutations of this type and concluded that while they were more unlike the non poor than those poor on a single dimension they were not as unlike the non poor as the cumulatively poor were. These results indicate that the cumulatively poor might be a better way of identifying the core poor than giving priority to one dimension over another.

This conclusion is not particularly original in itself - the work evaluating the Irish poverty strategy has involved combining measures of poverty (Layte, Nolan and Whelan 2000) and Statistics Netherlands analysis of the European Community Household Panel Survey has compared EU poverty on more than one dimension at a time (Dirven et al 2000). But there is clearly a case for using more than one measure and that involves ensuring that the data sets used to measure poverty need to include income data, social indicators and subjective measures – at the very least.

CONCLUSION

This paper reviews the methods that have been used in industrialised countries to measure the prevalence of poverty. It discusses the advantages and disadvantages of different measures and concludes that there is no single best measure. The choice of measures will depend on a variety of factors including

- what data is available already or feasible to collect in Mexico
- the traditions of poverty measurement exist in Mexico,
- how well measures have become accepted if at all in Mexico

However it is wise not to rely on a single measure of poverty but attempt to triangulate a variety of measures. In the end policy makers will have to decide which is the most appropriate measure as target for policy.

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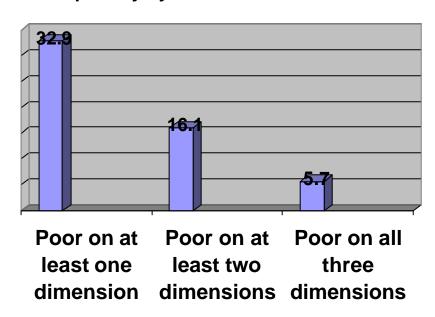
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% in poverty by combinations of measures



Poverty Rates: Britain 1999 (PSE Survey Gordon et al 2000)

